SPECIAL PROVISIONS

Contents:

1. SCOPE OF WORK

This project includes the replacement of water lines serving the employees lounge, a drinking fountain and 2 boxed ground hydrants. The hydrant and water fountain will be replaced. Surface restoration will include colored concrete sidewalk, concrete sidewalk, asphalt, sod and native grass seed.

2. PROJECT MEETINGS

Pre-Construction Conference. After the Contract has been awarded, but before the start of construction, a pre-construction conference will be held at a time and place mutually agreed to by the parties. The conference shall be attended by the following: the Contractor and his superintendent; the principal subcontractors; representatives of principal suppliers and manufacturers, as appropriate; the Engineers and his construction observer; representatives of the Owner and others as appropriate.

Unless previously submitted, the Contractor shall bring the following submittals to the conference: list of proposed Subcontractors; proposed construction schedule; schedule for submitting shop drawings and other submittals; schedule procurement dates; construction technique submittal forms (as applicable); preliminary payment schedule; and tentative schedule of values. Work shall not start prior to the Engineer's receipt of these submittals. The Engineer will preside at the conference and will arrange for keeping the minutes and distributing copies of the minutes to all persons attending the meeting.

3. UTILITIES AND BARRIERS

Notification. The Contractor shall contact the one call locate number in advance of performing any excavation work on the site to obtain utility locates over the entire area to be impacted by construction of the project. The Contractor shall immediately notify the Engineer of the

discovery of any utilities that are in conflict with the work that were not previously identified in the plans.

Identification. All utilities that may conflict with the work shall be the Contractor' responsibility to locate before any excavation is performed. Field markings provided by the utilities shall be preserved by the Contractor until actual excavation commences. All utility locations on the Drawings should be considered approximate and should be verified in the field by the Contractor. The Contractor shall also be responsible for locating all utilities that are not located on the Drawings.

Temporary Utilities. The Contractor shall provide all temporary electrical, lighting, telephone, heating, cooling, ventilating, water, sanitary, first aid, fire protection, and other utilities and services necessary for the performance of the work. All fees, charges, and other costs associated therewith shall be paid for by the Contractor.

Conflicts with Existing Utilities. For any utilities shown on the plans which are damaged or require temporary support to allow performance of the work, the Contractor shall contact the utility's owner and make all arrangements and pay all costs associated with the repair and/or temporary support of the utility. The Contractor shall comply with all requirements of the utility's owner.

The Contractor is responsible for the repair of any utilities that were properly marked by the utility locator and damaged by the Contractor, whether they are shown on the plans or not.

Barriers. The Contractor shall temporarily remove all fences, barricades, minor structures, and other obstructions that interfere with the prosecution of the work. Removal shall not extend beyond designated construction limits or right-of-way without first obtaining written authorization from the Engineer.

Fences and barricades used for the confinement or exclusion of livestock, animals, or persons shall be replaced at the end of each work day to the extent necessary to perform the restrictive intent of the barrier.

Unless otherwise directed by the Engineer or indicated on the Drawings, all barriers so removed shall be replaced following the completion of the work to as good or better condition than existed prior to the start of work. The requirement applies to small trees and decorative shrubs as well as fences, barricades, and minor structures.

The Contractor shall replace at his own expense all barriers damaged or destroyed.

4. REPAIR AND REPLACEMENT QUALITY

General. Items requiring repair or replacement due to damage or removal or otherwise necessitated in the course of pursuance of the work and which are not otherwise specified herein, shall be repaired or replaced to the following levels of quality.

Paved and Gravel Roads, Driveways, and Sidewalks. Repair or replacement shall be to a thickness and grade matching the existing condition. Quality of materials and methods shall comply with respective sections of the current edition of the Montana Public Works Standard Specifications.

Water and Sewer Main and Services. Repair or replacement shall be in a manner consistent with the existing condition using materials conforming to the Uniform Plumbing Code, the current editions of the DEQ 1 and DEQ 2 circulars, American Water Works Association Standard Specifications, and the requirements of the Montana Department of Environmental Quality. Construction shall also comply with the current edition of the Montana Public Works Standard Specifications. Repair or replacement will not be allowed with materials like the existing installation if they do not conform to the above-referenced standards.

Electrical, Telephone, Cable TV, Natural Gas, and Petroleum Lines. Repair or replacement shall be to the standards required by the utility owner and at the utility owner's option may be performed by the utility owner with full cost assessed to the Contractor.

Fences. All fences adjacent to any work site are to be maintained to the satisfaction of the abutting property owners. The Contractor shall notify the landowners of the need to temporarily removed or relocate fences for access to the work and shall coordinate such activities with the respective landowners in regards to removal, relocation, and restoration of fences prior to commencing work.

Any fence removed or destroyed during the course of the Contract shall be reinstalled or reconstructed in like kind at no cost to the Owner or the landowner. The cost for this work shall be considered incidental and no additional compensation will be allowed.

Other Items. Repair or replacement of other items not covered by the preceding shall be to the standards required by the owner of the item and at the owner's option may be performed by the owner of the item with full cost assessed to the Contractor.

Decisions Regarding Repair Versus Replacement. The decision of repair versus replacement of an affected item shall be at the discretion of the Engineer upon consultation with the owner of the item. The decision shall be based on a determination of whether repaired quality can equal the quality of a replacement installation. The Engineer's authority shall be final in this regard.

Limits of Repair and Replacement. The limits of areas to be repaired or replaced shall be determined by the Engineer in the field based on the extent of damage or removal sustained. The determination shall be based on insuring that all damaged or removed portions of the existing installation are fully restored. The authority of the Engineer shall be final in this regard. All work effects outside limits as described in these Contract Documents are subject to repair and replacement quality as described herein.

Repair by Party Owning or Maintaining Item. The party owning or maintaining the item under consideration shall have the exclusive right to undertake repair or replacement themselves and charge the Contractor for full costs incurred or to direct and supervise the Contractor to repair or replace the item to their standard of quality. The authority of the owner of the item shall be final in this regard.

5. GENERAL CONSTRUCTION REQUIREMENTS

Quality Assurance. The Engineer will monitor the construction of work covered by this section to determine if the work is being performed in accordance with the contract requirements. The Engineer does not have the authority or the means to control the Contractor's methods of construction. It is, therefore, the Contractor' responsibility to utilize all methods, equipment, manpower, and other means necessary to assure that the work is installed in compliance with the Drawings and Specifications, and laws and regulations applicable to the work. All buried work items shall be installed in the presence of the Engineer or may not be considered for payment.

Grade and Alignment. The Contractor shall provide all construction staking as required to define the locations of the improvements to be installed under this contract.

Tolerances. Construction tolerances for the work shall be as outlined in the Technical Specifications.

Construction Limits. Construct activities shall be limited to area no more than 40-feet from the edge of excavation and embankment, or any other improvements shown on the plans. Equipment access between roads and the construction site shall be limited to a single route to minimize disturbance. Disturbance and equipment access beyond these limits is not allowed without the written approval of both the Engineer and the owner of the affected property. If so approved, disturbance beyond construction limits shall meet all requirements imposed by the landowner; this includes existing roads used and/or improved as well as the construction of new access roads. Special construction, reclamation, or post-construction road ripping or other closure provisions required by the landowner on access roads beyond the construction limits shall be performed by the Contractor at no additional cost to the Owner.

Areas of Disturbance. Approved areas of disturbance are those areas disturbed by construction activities within the construction limits and along designated or approved access routes. Such areas shall be fine graded to blend with the existing terrain. Other areas that are disturbed by the Contractor's activities outside the limits noted above will be considered as site damage or unapproved areas of disturbance subject to the repair and replacement quality as specified herein. Such areas will also require the reclamation operations noted above and as specified herein, but costs of such work shall be borne by the Contractor. This includes areas selected by the Contractor outside the defined construction limits for mobilization, offices, equipment, or material storage. Stockpiling of gravel on-site is not allowed except within the parking lot at locations approved by the Engineer.

6. MATERIAL SOURCES

If additional material is needed for embankment or other materials, the Contractor will be responsible for placement and import from an off-site site location secured by the Contractor. The material shall be clean material, suitable for use as fill material and subject to the approval of the Engineer.

If excess material is generated during construction, the Contractor shall be responsible for export and disposal at an off-site location secured by the Contractor at no additional cost to the Owner.

Haul routes shall be within the corridors of disturbance created by this project.

7. ENVIRONMENTAL PROTECTION

The Contractor shall comply with all laws and regulations of the United States Corps of Engineers and Environmental Protection Agency, Montana Department of Fish, Wildlife and Parks, Department of State Lands, Department of Environmental Quality, the Department of Natural Resources and Conservation, and with all other Federal, State, and Local laws and regulations controlling pollution of the environment. He shall take necessary precautions to prevent pollution of streams, lakes, ponds, and reservoirs with fuels, oils, bitumens, chemicals, or other harmful materials and to prevent pollution of the atmosphere from particulate and gaseous matter.

The Contractor also agrees to comply with the requirements of any permits obtained for the project by the Owner. These permits include but may not be limited to the permits listed under the Permits and Regulatory Requirements section. Copies of any of these permits are available upon request from the Engineer.

The Contractor shall be responsible for submitting and obtaining a temporary discharge permit from the Montana Department of Environmental Quality for the discharge of any water related to the construction of this project. A construction Dewatering Discharge Permit, issued by the Department of Environmental Quality, is required if water from construction is discharged to state waters. The Department of Environmental Quality must be contacted immediately if either contaminated soil or contaminated groundwater is encountered.

The Contractor shall be responsible for submitting and obtaining a storm water discharge permit from the Montana Department of Environment Quality. The cost of any erosion control measures or other work required by the permit shall be included in the bid and are considered incidental to the project.

8. WEED CONTROL

Prior to mobilizing equipment to the project site, the Contractor shall clean his equipment and vehicles to assure no weeds are imported. If there is an abnormal growth of noxious weeds on a

project site after construction as determined by the Owner or local weed control authority, the Contractor will be responsible for weed control under the contract warranty.

9. PERMITS AND REGULATORY REQUIREMENTS

Jurisdiction. The performance of this work shall be under the jurisdiction of the following agencies, departments, and standards and compliance with the requirements thereof is required:

Federal Level: United States Law

State Level: Department of Environmental Quality; Department of Fish, Wildlife & Parks; Montana Department of Transportation; Montana Building Code Division; Uniform Building Code; Uniform Plumbing Code; Uniform Mechanical Code; National Electric Code; State annotations to these codes; and Montana State Law.

Local Level: Jefferson County

Contractor's Responsibility. The Contractor shall familiarize himself with the requirements of all regulatory agencies pertaining to the performance of the work on the project.

The Contractor shall secure and pay for all permits, licenses, and fees necessary for the performance of the work.

The Contractor shall perform all work in accordance with the regulatory requirements. Any conflict between the Contract Documents and the regulatory requirements shall be brought to the immediate attention of the Engineer.

10. SMOKE AND DUST CONTROL

The Contractor shall have informed himself of all applicable State Board of Health requirements and similar State or Federal requirements pertaining to control of or abatement of air pollution. The Contractor shall have provided or be prepared to provide such air pollution control measures as are required to comply with the minimum standards established by such agencies.

Hauling of material and transport of equipment along public roadways or through the towns and adjacent other structures and dwellings shall require effective dust abatement procedures. This also applies to the unloading and placement of spoils material at deposition sites. The Contractor shall utilize environmentally sound methods for watering and/or otherwise chemically treating dust-generating surfaces to comply with all applicable legal standards for airborne particulates. Prior to any work, the Contractor shall submit a written plan for dust abatement procedures identifying at a minimum the following:

- Times and nature of dust generating activity on public roads and at deposition sites.
- Nature and chemical characterization of dust abatement materials to be used.

- Method of application of dust abatement materials to be used.
- Time schedule for application of dust abatement materials to be used.
- Availability of equipment and operators for emergency application of dust abatement materials at other than scheduled times.

Watering for dust control is considered incidental to the Contract and shall be performed at no additional cost to the Owner.

11. SITE CLEAN UP

The Contractor shall be responsible for final clean up at the end of the project to a level satisfactory to the Owner. All construction debris, no matter how small, shall be collected and removed from the site. All wheel ruts shall be filled in and be leveled to match the adjacent grade and material. Re-seeding, re-sodding, or other re-surfacing may be necessary to repair any construction related impacts or damage.

All survey markings, stakes, temporary paint marks, flagging and other devices shall be removed regardless of who installed them. All excess pavement, concrete, gravel, soil, or other construction materials not intended for permanent use shall be removed.

All final slopes shall be dressed manually to remove woody debris, accumulated trash and oversized material. Any new slope or topsoil surfaces shall be hand raked to provide a uniform appearance, and seeded including erosion control blanket or sodded. The Contractor shall dress all gravel, pavement and concrete edges to eliminate abrupt edges and provide a smooth transition. All construction related temporary sediment control devices shall be removed as soon as practical.

Unless specifically noted otherwise, all final cleanup work shall be incidental to other work items in the contract and no separate payment shall be made.

12. SANITARY FACILITIES

Sanitary facilities shall be provided and maintained by the Contractor who will comply with state and local regulations. The cost of furnishing, installing, and maintaining sanitary facilities shall be considered incidental to other items of work and no additional compensation will be allowed.

13. INCORPORATION OF MONTANA PUBLIC WORKS SPECIFICATION

All work not specially described in the technical specifications of these bid documents shall be performed in compliance with the applicable technical specifications section found in Montana Public Works Specification- Sixth Edition. The Montana Public Works Specifications shall be modified to require the Contractor to provide compaction and concrete testing through an independent testing laboratory, not the Owner.

14. MEASUREMENT AND PAYMENT

A. **Scope:** This section describes the method of measurements and the basis of payment for all work shown on the drawings and required by the Contract Documents. This measurement and payment section shall take precedence over all other references to measurement and payment referenced in these specifications (with the exception of any addenda).

B. **Bid Prices:** The bid price for each item of the Contract in the Bid Proposal shall cover all work shown on the drawings and be defined in the specifications and other contract documents. All costs in connection with the work including furnishing all materials, equipment, and tools, and performing all necessary labor and supervision to fully complete the work, shall be included in the lump sum or unit price bid items on the proposal. The amounts shown on the proposal shall be the contract price.

No item that is required by the Contract Documents for the proper and successful completion of the work will be paid for outside of or in addition to the prices submitted in the Bid Proposal. All work not specifically set forth as a pay item in the Bid Proposal shall be considered a subsidiary obligation of the Contractor and all cost in connection therewith shall be included in the prices bid.

Retainage at the amounts specified in the General Conditions will be withheld from each progress payment.

C. **Estimated Quantities:** Any estimated quantities stipulated in the Bid Proposal or other Contract Documents are approximate and are to be used only as a basis for estimating probable cost of the work and for the purpose of comparing the bids submitted for the work.

D. **Method of Measurement:** No measurement will be made on bid items representing a lump sum bid.

E. **Basis of Payment:**

1. Mobilization, Insurance & Bonding

- General: This bid item shall include the costs associated with mobilizing to the project site, insurance, bonding, permitting, and submittals.

- Work Included:
  - All labor, tools, equipment, materials, royalties, and incidentals needed to complete the work as specified;
  - Transport and set up all equipment, materials, and other items needed to complete the project;
  - All permits, coordination, and compliance inspections required for the work;
  - Insurance and bonding;
  - Provide and install project sign;
  - Prepare and provide submittals, construction schedule, and all other paperwork required by the contract documents prior to construction startup.

- Measurement: Measurement shall be one lump sum bid item.

- Payment: Payment shall be by the price bid for the lump sum bid item listed in the proposal.

2, 3, and 4. Water Supply Line

- General: This bid item shall include the installation of HDPE water supply line of the size listed in the proposal.

- Work Included:
  - All labor, tools, equipment, materials, royalties, and incidentals needed to complete the work as specified;
  - Connection to existing pipe;
  - Utility bracing/support and coordination with Utility Owners;
  - Disposal of existing pipe and appurtenances as required;
  - Provide compaction testing from an independent testing firm;
  - Clearing and grubbing;
  - Survey as required to maintain alignment and grade;
  - Repair and replacement of any items not specifically mentioned elsewhere in these specifications;
  - Trench excavation and backfill;
  - All gaskets and appurtenances required to make pipe connections;
  - Type 1 bedding;
  - Type 2 bedding;
  - Exploratory excavation and existing utility crossings;
  - Remove spoils generated by pipe installation;
  - Provide and install pipe;

- Required testing of pipe;
- Fine grading of disturbed area.

- Measurement: Measurement shall be per lineal foot of pipe installed including fittings and valves. Measurement shall be to the nearest foot.

- Payment: Payment shall be by the unit price bid per lineal foot of pipe listed in the proposal.

5. 6" HDPE Conduit

- General: This bid item shall include the installation of 6" HDPE conduit in a shared trench with water supply line.

- Work Included:
  - All labor, tools, equipment, materials, royalties, and incidentals needed to complete the work as specified;
  - Connection to existing pipe;
  - Utility bracing/support and coordination with Utility Owners;
  - Provide compaction testing from an independent testing firm;
  - Clearing and grubbing;
  - Survey as required to maintain alignment and grade;
  - Repair and replacement of any items not specifically mentioned elsewhere in these specifications;
  - Trench excavation and backfill;
  - All gaskets and appurtenances required to make pipe connections;
  - Type 1 bedding;
  - Type 2 bedding;
  - Exploratory excavation and existing utility crossings;
  - Remove spoils generated by pipe installation;
  - Provide and install pipe and fittings;
  - Required testing of pipe;
  - Fine grading of disturbed area.

- Measurement: Measurement shall be per lineal foot of conduit installed including fittings and valves. Measurement shall be to the nearest foot.

- Payment: Payment shall be by the unit price bid per lineal foot of conduit listed in the proposal.

6. Valve Vault

- General: This bid item shall include providing and installing a a valve vault and associated appurtenances.

- Work Included:
  - All labor, tools, equipment, materials, and incidentals needed to complete the work as specified;
  - Excavation and backfill;
  - Provide and install precast concrete vault and cover including aluminum hatch;
  - Provide and install all pipe, valves and fittings internal to vault;
  - Provide and install vault ladder;
  - Provide and compact gravel base;
  - Survey as required to determine vault location and elevation;
  - Connections to existing pipes outside and adjacent to vault;
  - Drain rock and filter fabric for hatch drain;

- Measurement: Measurement shall be per each valve vault installed.

- Payment: Payment shall be by the unit price bid for each valve vault installed listed in the proposal.

7. and 8. Curb Valve

- General: This bid item shall include providing and installing a buried curb valve of the size listed in the proposal.

- Work Included:
  - All labor, tools, equipment, materials, and incidentals needed to complete the work as specified;
  - Connections to pipe;
  - Utility bracing/support and coordination with Utility Owners;
  - Disposal of existing pipe and appurtenances as required;
  - Provide compaction testing from an independent testing firm;
  - Clearing and grubbing;
  - Survey as required to maintain alignment and grade;
  - Repair and replacement of any items not specifically mentioned elsewhere in these specifications;
  - Trench excavation and backfill;

- All gaskets and appurtenances required to make pipe connections;
- Type 1 bedding;
- Type 2 bedding;
- Exploratory excavation and existing utility crossings;
- Remove spoils generated by pipe installation;
- Provide and install valve;
- Provide and install cast iron cover;
- Required testing of valve;
- Fine grading of disturbed area.

◆ Measurement: Measurement shall be per each curb valve installed.

◆ Payment: Payment shall be by the unit price bid for each curb valve installed listed in the proposal.

9. Boxed Ground Hydrant

◆ General: This bid item shall include providing and installing a boxed ground hydrant.

◆ Work Included:
- All labor, tools, equipment, materials, and incidentals needed to complete the work as specified;
- Connection to pipe;
- Utility bracing/support and coordination with Utility Owners;
- Provide compaction testing from an independent testing firm;
- Clearing and grubbing;
- Survey as required to maintain alignment and grade;
- Repair and replacement of any items not specifically mentioned elsewhere in these specifications;
- Trench excavation and backfill;
- All gaskets and appurtenances required to make pipe connections;
- Type 1 bedding;
- Type 2 bedding;
- Exploratory excavation and existing utility crossings;
- Remove spoils generated by pipe installation;
- Provide and install pipe, fittings and boxed ground hydrant;
- Provide and install base course;
- Provide and install drain rock;
- Fine grading of disturbed area.

- Measurement: Measurement shall be per each boxed hydrant installed.

- Payment: Payment shall be by the unit price bid for each boxed ground hydrant installed listed in the proposal.

10. Pavement Removal and Replacement

- General: This bid item shall include the removal and replacement of asphalt surfacing section.

- Work Included:
  - All labor, tools, equipment, materials, and incidentals needed to complete the work as specified;
  - Saw cuts;
  - Demolition, loading, unloading, transport and disposal of asphalt to be removed;
  - Disposal fees (if any);
  - Placement of underlying crushed base course with compaction;
  - Survey line and grade;
  - Provide required tack coat;
  - Provide and place, and compact asphalt;
  - Repair parking lot striping;
  - Required testing of crushed base course and asphalt.

- Measurement: Measurement shall be per square yard of pavement removal and replacement performed. Measurement shall be to the nearest square yard.

- Payment: Payment shall be by the price bid per square yard of pavement removal and replacement performed as listed in the proposal.

11. Sidewalk Removal and Replacement

- General: This bid item shall include the removal and replacement of concrete sidewalk.

- Work Included:
  - All labor, tools, equipment, materials, and incidentals needed to complete the work as specified;
  - Saw cuts;

- Demolition, loading, unloading, transport and disposal of sidewalk to be removed;
- Disposal fees (if any);
- Placement of underlying crushed gravel with compaction;
- Survey line and grade;
- Provide and place concrete;
- Install contraction and expansion joints;
- Protection of existing concrete;
- Finishing;
- Hot and cold weather concreting procedures.

◆ Measurement: Measurement shall be per square foot of sidewalk removed and replaced. Measurement shall be to the nearest square foot.

◆ Payment: Payment shall be by the price bid per square foot of sidewalk removed and replacement as listed in the proposal.

12. Pavement Removal with Colored Sidewalk Replacement

◆ General: This bid item shall include the removal of asphalt and replacement with colored concrete sidewalk.

◆ Work Included:
- All labor, tools, equipment, materials, and incidentals needed to complete the work as specified;
- Saw cuts;
- Demolition, loading, unloading, transport and disposal of asphalt to be removed;
- Disposal fees (if any);
- Provide and place concrete;
- Install contraction and expansion joints;
- Protection of existing concrete;
- Finishing;
- Hot and cold weather concreting procedures.

◆ Measurement: Measurement shall be per square foot of asphalt removed and replaced with colored concrete. Measurement shall be to the nearest square foot.

◆ Payment: Payment shall be by the price bid per square foot of asphalt removed and replaced with colored concrete as listed in the proposal.

13. Granite Curb Removal and Replacement

- General: This bid item shall the removal and replacement of granite curb.

- Work Included:
  - All labor, tools, equipment, materials, and incidentals needed to complete the work as specified;
  - Removal and temporary on site storage of granite curb;
  - Resetting of curb sections.

- Measurement: Measurement shall be one lump sum bid item.

- Payment: Payment shall be by the price bid for the lump sum bid item listed in the proposal.

14. Rock Wall Removal and Replacement

- General: This bid item shall the removal and replacement of Natural Rock Wall.

- Work Included:
  - All labor, tools, equipment, materials, and incidentals needed to complete the work as specified;
  - Removal and temporary on site storage rock;
  - Resetting of rock to reform wall.

- Measurement: Measurement shall be one lump sum bid item.

- Payment: Payment shall be by the price bid for the lump sum bid item listed in the proposal.

15. Plumbing

- General: This bid item shall the installation of plumbing in the employees lounge and adjacent closet.

- Work Included:
  - All labor, tools, equipment, materials, and incidentals needed to complete the work as specified;
  - Remove existing piping;

- Wall penetrations;
- Provide and install pipe, fittings, unions, and connectors;
- Remove and replace wooden shelving;
- Provide and install pipe supports.

- Measurement: Measurement shall be one lump sum bid item.

- Payment: Payment shall be by the price bid for the lump sum bid item listed in the proposal.

16. Remove and Replace Drinking Fountains

- General: This bid item shall the removal and replacement of a drinking fountain.

- Work Included:
  - All labor, tools, equipment, materials, and incidentals needed to complete the work as specified;
  - Remove existing drinking fountain;
  - Provide and install new drinking fountain;
  - Provide and install new pipe, fittings, and connectors.

- Measurement: Measurement shall be one lump sum bid item.

- Payment: Payment shall be by the price bid for the lump sum bid item listed in the proposal.

17. Blow Off

- General: This bid item shall the installation of items associated with the blow off. The curb valve is paid under a separate bid item.

- Work Included:
  - All labor, tools, equipment, materials, and incidentals needed to complete the work as specified;
  - Provide and place rock with weed barrier fabric;
  - Provide and install screen for pipe end;
  - Excavating, backfill and grading.

- Measurement: Measurement shall be one lump sum bid item.

- Payment: Payment shall be by the price bid for the lump sum bid item listed in the proposal.

18. Topsoil and Sod

- General: This bid item shall include placement of top soil, fine grading, and sodding over all areas disturbed by construction.

- Work Included:
  - All labor, tools, equipment, materials, and incidentals needed to complete the work as specified;
  - Fine grading of site;
  - Place topsoil;
  - Import of additional topsoil as needed;
  - Provide and place sod;
  - Care of sod as specified.

- Measurement: Measurement shall be one lump sum bid item.

- Payment: Payment shall be by the price bid for the lump sum bid item listed in the proposal.

19. Topsoil, Seed and Mulch

- General: This bid item shall include placement of top soil, fine grading, seeding, and mulch and erosion control blanket over all areas disturbed by construction.

- Work Included:
  - All labor, tools, equipment, materials, and incidentals needed to complete the work as specified;
  - Fine grading of site;
  - Place topsoil;
  - Import of additional topsoil as needed;
  - Seeding and mulch;
  - Provide and place erosion control blanket;
  - Weed spraying;
  - Care of seed and mulch as specified.

- Measurement: Measurement shall be one lump sum bid item.

- Payment: Payment shall be by the price bid for the lump sum bid item listed in the proposal.

TECHNICAL SPECIFICATIONS
TABLE OF CONTENTS

Note:
All other work shall be performed in compliance with the Montana Public Works Specification- Sixth Edition. The Montana Public Works Specifications shall be modified to require the Contractor to provide compaction and concrete testing through an independent testing laboratory, not the Owner.

SECTION 02/603

EROSION CONTROL BLANKET

PART I DESCRIPTION

1. GENERAL

   A. Temporary erosion control blanket is for areas with native seed mix.

2. SUBMITTALS

   A. The following submittals are required:
      1. Material and product specifications including specified properties.

PART 2 PRODUCTS

1. TEMPROARY EROSION CONTROL MAT

   A. Temporary erosion control blanket shall be a wheat straw-coconut fiber mat.

   B. Temporary erosion control blanket shall meet or exceed the following specifications:
      1. Functional longevity shall be 24 months minimum.
      3. Mass per unit area shall be 8.0 oz/sy minimum per ASTM D-6475.
      4. Tensile strength per ASTM D-6818 shall be 150 x 150 lbs/ft minimum.
      5. Tensile elongation shall be 30% maximum per ASTM D-6818.
      6. Minimum thickness of 285-mils per ASTM D-6525.

   C. Temporary erosion control blanket shall be Landlok CS2 as manufactured by Contech or an approved equal.

PART 3 CONSTRUCTION METHODS

1. GENERAL

   A. Install erosion control blanket in accordance with manufacturer recommendations.

   B. Install temporary erosion control blanket with a minimum of 2 anchors per square yard.

END OF SECTION 02/603

SECTION 08/305

ACCESS HATCHES

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section covers the materials, fabrication, and installation of metal access hatches for valve vaults and similar applications.

1.3 GENERAL

A. All hatches shall be designed for the application indicated on the Plans. Dimensions indicated on the Plans are nominal dimensions. The Contractor shall provide the rough opening size required for the installation of each hatch.

1.4 SUBMITTALS

A. The Contractor shall submit detailed drawings indicating the type of hatch to be used at each location the method of installing the hatch, hatch characteristics including dimensions, materials, framework, hardware and other pertinent features of the hatch, and the type of coating, when required, to be provided.

PART 2 - MATERIALS

2.1 ALUMINUM HATCHES

A. Hatches shall be constructed of aluminum plate with extruded aluminum frames. Floor hatches shall be required to withstand a 300 psf live load. Channel frames shall be ¼ - inch aluminum with an anchor flange around the perimeter. Doors shall be with an anchor flange around the perimeter. Doors shall be oriented as shown on the Drawings and shall be equipped with stainless steel hardware throughout, including hinges, pins, spring operators, etc. All hatches shall have positive locking spring operators, etc. All hatches shall have positive locking devices, tension bars or springs to provide ease of operation, hold-open devices, and stainless steel safety chains to span between double doors in their open position.

B. All pairs of double doors shall be capable of individual opening and closing, including safe automatic hold-open.

C. Mill finish is required on hatches with thixotropic coal tar coating applied to the exterior of the frame in contact with concrete.

D. Hatches shall include a recessed padlock hasp.

E. Hatches shall be equal to Type "J" or Type "JD" aluminum hatches as manufactured by the Bilco Company.

F. Hinges shall be on the long side of the door opening.

2.2 HATCH SCHEDULE

Hatch Location	Type	Dimensions
Valve Vault	"J"-Aluminum	48-inch x 30-inch Single Door

PART 3 – EXECUTION

3.1 GENERAL

A. Hatches shall be installed according to the manufacturer's requirements. Hatches shall be installed plumb and square at the locations indicated on the Plans. Framework shall be cast into concrete openings or securely bolted to framed openings using stainless steel bolts.

Aluminum doors shall not be permitted to be in direct contact with concrete or masonry surfaces. All aluminum framework shall be liberally coated with bituminous material in a manner approved by the Engineer before being installed in contact with concrete or masonry.

No obstructions shall be permitted in or around the hatch area that will interfere with the opening and closing of the doors. Doors shall operate freely and easily and when closed, shall fit true and snug. Warped, racked, or deflected frames will not be permitted or accepted.

Aluminum hatches shall not be coated except as herein provided for installation in concrete or masonry openings.

Drainage connections on floor hatch frames shall be piped to drain as shown in the drawings.

END OF SECTION 08/305

SECTION 15/200

PLUMBING

PART 1 GENERAL

1. WORK INCLUDED

   A. This section covers the work necessary to furnish and install piping, fixtures, appliances, equipment, and appurtenances for complete and functional plumbing systems as indicated in the Drawings and specified herein.

   B. Work included in this section is as follows:

      1. Piping and valves for both indoor and outdoor buried service.
      2. Boxed ground hydrants
      3. Drinking fountain

2. GENERAL

   A. The drawings do not show all details of all piping systems, and instead only portray the functionality required. The **CONTRACTOR** shall provide all accessories, adapters, appurtenances and supports to achieve a complete and functional installation. The **CONTRACTOR** shall verify all piping routings and locating dimensions shown for conflicts with other piping or utilities, and shall provide any offsets required to achieve clearance at no additional cost to the **OWNER**. In the event changes to the locations of equipment or piping shown are necessary, the **CONTRACTOR** shall submit such changes in writing to the **ENGINEER** before proceeding with such changes.

   B. All fixtures and appliances shall be installed in complete accordance with the manufacturer's recommendations and requirements, including structural support and venting.

   C. Manufacturers' references are included herein for reference and to establish the required level of quality; "or equal" products may be proposed subject to the requirements for Submittal review.

3. CODES, PERMITS AND COMPLIANCE

   A. Plumbing under these Specifications shall conform to all requirements of the current editions of the UPC, IBC, UFC, DEQ Circulars and all other codes, standards and ordinances applicable to work. In event of conflicts between these Specifications and applicable codes or standards, the codes and standards shall govern.

   B. All piping, fixtures, and accessories shall be installed in strict accordance with the laws and regulations of the State of Montana and Jefferson County.

C. Any permits legally required for the work under these Specifications shall be the responsibility of the **CONTRACTOR** to obtain. Costs of such permits and scheduling of any inspections required in conjunction with such permits or associated requirements shall be the responsibility of the **CONTRACTOR**.

D. Completed piping systems shall be tested by the **CONTRACTOR** in accordance with all applicable codes and standards before charging such piping.

4. SUBMITTALS

A. The **CONTRACTOR** shall provide the following information:

1. Fixtures and Appliances – Provide manufacturers' catalog information, photographs, material and component specifications, fully dimensioned drawings, weight, support requirements, storage and installation instructions, and operating manual.

2. Exposed Piping Systems – Provide manufacturers' catalog information, material specifications, dimensions, and ratings.

3. Pipe Fittings and Appurtenances – Provide manufacturers' catalog information, material specifications, dimensions and ratings.

4. Buried Piping Systems - Provide manufacturers' catalog information, material specifications, dimensions, and ratings.

5. Pipe Supports – Provide manufacturers' catalog information, material specifications, dimensions, load ratings, recommended spacing, and types and arrangement of fasteners, including substrate requirements.

PART 2 PRODUCTS

1. GENERAL

A. Like items of material provided under these Specifications shall be the product of one manufacturer.

2. HDPE PIPE AND FITTINGS FOR BURIED SERVICE

A. High density polyethylene pipe (HDPE) for buried domestic water supply and yard piping shall be NSF listed. HDPE pipe shall be iron pipe size with 333 psi pressure rating. Pipe shall have an SDR of 7, based on inside diameter controlled dimensions. Pipe shall meet ASTM D2239 and AWWA C901. HPDE pipe shall be formulated from 3408 polyethylene resin, and extruded. The exterior of HDPE pipe shall be permanently marked with size, SDR, operating pressure, date of manufacture, and NSF logo. Pipe shall have a 25-year warranty from the manufacturer, and shall be *Endot Industries Endopoly PE 3408*, or **ENGINEER** approved equal.

B. Fittings for buried HDPE piping shall be brass with compression connections or threaded connection as indicated in the drawings. *Mueller* or approved equal.

3. CURB VALVES – WATER SERVICE

A. Curb valve for buried water service shall be brass ball valves with compression connections suitable for use with HDPE pipe and Minneapolis pattern top threads. Valves shall be rated 300-pound WOG, and shall meet the requirements of AWWA C800. Valves shall be *Mueller 300 ball curb valve*, or **ENGINEER** approved equal.

B. Curb boxes shall be cast iron construction, Minneapolis pattern, and allow height adjustment between 48 and 36-inches, 54 and 42-inches, or 60 and 48-inches as required. The curb box shall include a lid with plug. Curb boxes shall be *Mueller H-10300 series* or ENGINEER approved equal. Two keys will be provided to the Owner for opening and closing the valves.

4. GALVANIZED STEEL PIPE AND FITTINGS

A. Galvanized steel piping shall be carbon steel, Schedule 40, meeting ASTM A120, ASTM A53 Grade B, or ASTM A106 Grade B.

B. Galvanized steel pipe fittings and joints shall be screwed. Fittings shall be Schedule 40, galvanized, meeting ASTM A196 or ASTM A47. Fitting dimensions shall conform to ANSI B16.3. Unions shall be 300-pound malleable iron, galvanized, with brass to iron seats.

C. Thread lubricant for galvanized steel pipe shall be *Teflon* tape or joint compound insoluble in water.

5. COPPER PIPE, TUBING AND FITTINGS

A. Exposed pipe for building hot and cold domestic water service shall be hard drawn, Type L copper, conforming to ASTM B88.

B. Buried pipe for domestic water service beneath building slabs and foundations shall be Type K copper, conforming to ASTM B88.

C. Fittings for copper pipe and tubing shall be solder-joint socketed pure wrought copper, conforming to ASTM B75 and dimensions conforming to ANSI B16.22. Solder shall be 95-5 wire, lead free, ASTM B32, Alloy Grade 95 TA. Paste flux shall be used with solder, and shall meet Fed. Spec. O-F-506, Type I, Form A.

D. Insulating unions, where required, shall be brass body, dielectric type, with threaded ends, adapted to copper pipe and tubing with solder-by-NPT brass adapters.

6. BALL VALVES – WATER SERVICE

A. Interior valves for 2-inch and smaller hot and cold water service shall be all bronze, end entry type, with *Teflon* seats and packing and lever operators with fixed stops. Valves shall be rated 400-pound WOG, and shall have threaded ends. Valves shall be *Nibco T-585-70, Anvil/Grinnell Figure 3500*, or **ENGINEER** approved equal.

7. PLUMBING PIPE SUPPORTS AND ACCESSORIES

A. Wall-mounted pipe supports for lines 1½-inch and smaller shall be one-hole, clamp type, and shall be *Anvil/Grinnell Figure 126*, or **ENGINEER** approved equal.

B. Hanger pipe supports shall be cradle type with hanger rods and clevises, and shall be *Anvil/Grinnell Figure 104* or *Figure 260,* or **ENGINEER** approved equal.

C. Floor Mounted Pipe Supports shall be offset clamp type, and shall be *Anvil/Grinnell Figure 103,* or **ENGINEER** approved equal. If required a section of structural steel channel or tubing may be used to vertically adjust the height of the support. The structural steel shall be anchored to the floor using ¼-inch stainless steel anchor bolts.

D. Fasteners for pipe clamps and hangers shall be as recommended by the support manufacturer, and shall be suitable for proper anchorage to the substrate material to which attached. Fasteners shall be galvanized steel.

8. BOXED GROUND HYDRANTS

A. Boxed ground hydrant shall be flush mount hydrants, non-freeze, with operating lever and riser suitable for 4-foot or 5-foot bury depth as indicated in the drawings. The hydrant will include a vacuum breaker, ¾-inch hose connection, and drain hole/port. The hydrant shall be bronze quarter turn, automatic draining hydrant with key and locking device. Pipe connection shall be ¾-inch or 1-inch female. Boxed ground hydrants shall be *JR Smith Figure 5811*, *Zurn Z1360* or **ENGINEER** approved equal.

9. DRINKING FOUNTAIN

A. Drinking fountain assembly shall be bi-level with two separate fountains, a bubbler, pushbutton actuators, automatic stream height regulation and inlet strainer. The water connection shall be 3/8-inch tubing, and the drain shall be 1-1/4-inch. A heavy gauge steel access panel shall allow access to piping connections. Water basins shall be contoured to avoid standing water and spashing. The fountain shall be designed for outdoor use. Exterior surfaces shall be finished with brown colored stone aggregate. The fountain shall meet the state and federal requirements of the Americans with Disabilities Act. Drinking fountain shall be certified to NSF/ANSI 61. The drinking fountain shall be a Halsey Tayler Model 4595 or **ENGINEER** approved equal.

PART 3 EXECUTION

1. GENERAL

A. All plumbing and installation of piping, appurtenances, and fixtures shall fully conform to the current edition of the *Uniform Plumbing Code* (UPC), and all applicable state and local regulations. All work shall be approved by the State Plumbing Inspector.

B. Drawings do not attempt to show the exact details of all piping. No extra payment will be allowed for fittings, adapters, appurtenances, clearances or offsets required to complete the Work. Changes in locations of equipment or piping, contemplated by the **CONTRACTOR**, must be submitted to the **ENGINEER** in writing, and cannot be executed without the **ENGINEER'S** approval. All work shall be completed to provide a fully functional installation as shown and specified.

2. PIPING

A. All piping intended to carry potable water shall be disinfected before placing into service. Disinfection procedures shall conform to AWWA C651.

B. All piping systems installed under this section do not require painting or coating.

C. Buried HDPE yard piping and fittings for domestic water service shall be installed in accordance with AWWA C901 and ASTM D2774. A minimum of 6-inch of pipe bedding shall be placed on all sides of buried HDPE hard piping.

3. APPLIANCES AND APPUTANCES

A. Install the boxed ground hydrants, drinking fountain and all other appliances and appurtenances in accordance with manufacturers recommendations.

4. TESTING

A. Completed cold water piping, including fixture connections shall be tested and demonstrated to be leak free by the **CONTRACTOR** by charging with water and maintaining 80 psi pressure for one hour, in the presence of the **ENGINEER**. Any leaks or defects shown shall be promptly remedied by the **CONTRACTOR**.

B. Other tests of completed piping as prescribed by the UPC shall also fully apply, and shall be conducted in the presence of the **ENGINEER**.

END OF SECTION 15/200